# COMPUTER SIMULATION OF HYDRAULIC FLOW IN A MIXER OF SPECIAL CONSTRUCTION

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As a result of the research, data were obtained from computer simulation of hydrodynamic flow using the FlowVision software package. This program made it possible to create hydrodynamic flow models when using three types of mixers - the proposed special design of the diaphragm, pipe and washer mixers. Virtual flow models are obtained, pressure distribution, velocity, and flow turbulence plots are shown and modeled. These factors cause active and complete mixing of the reagent solution and the treated water.

The complete information on the processes, taking into account the design and technological parameters of these types of mixers, was obtained. Computer simulation of flow in mixers of different types has allowed to significantly reduce the time to conduct research, as well as to confirm the results of full-scale experiments presented by the author earlier.

As a result of the analysis of the obtained data in the computer simulation of the movement of the wastewater flow with the reagent solution, we can distinguish the following: when using different types of mixers, the best results on intensive mixing of the flow were obtained when using a diaphragm special design and washer mixer. The latter is evidenced by the graphs of the distribution of pressure and velocity in these mixers. When using a special design diaphragm, there was noticeable intense mixing of almost the entire volume of the mixture that was in the pipeline directly near the mixer. When using a pipe mixer, turbulence was negligible and concentrated at the point of introduction of the coagulant. When using the washer mixer, you could notice intense mixing only in the center of the flow.

The obtained hydrodynamic models indicate that the proposed diaphragm of a special design provides more efficient mixing of wastewater with the reagent. Pipe and washer mixer models perform worse. The proposed diaphragm allows the maximum possible and rapid mixing of wastewater with the reagent.

The obtained hydrodynamic models indicate that the proposed diaphragm of a special design provides more efficient mixing of wastewater with a reagent. Models with pipe and washer type mixers show worse results. The proposed diaphragm allows you to fully and quickly mix wastewater with a reagent.

**Література**

1. Shevchenko A. Computer Simulation of Hydraulic Flow in a Mixing Device with a Diaphragm of Special Design Installed in It / A. Shevchenko, T. Shevchenko // Eastern-European Journal of Enterprise Technologies. – 3/7 (87) 2017. – P. 33-39.